

REMARKS

Claims 1-21 remain pending after this response.

Interview with Examiner

Applicants thank the Examiner for the courtesy extended toward their representative during the interview with the Examiner on March 13, 2006. During the interview, those distinctions that exist between the claimed invention and the cited prior art were discussed. Applicants also presented to the Examiner several tables and figures which confirm the difference between cumulative particle size and cumulative volume distribution. In accordance with the suggestion of the Examiner, two Declarations under 37 CFR 1.132 are submitted herewith placing the noted tables and figures in verified form.

Entry and Consideration of Response

This response should be entered and considered by the Examiner for the reason that the information which forms the basis for the attached Declarations under 37 CFR 1.132 presented to rebut the position of the Examiner was discussed during the interview and believed by the Examiner to assist in distinguishing over the cited prior art.

Response to Restriction

Applicants acknowledge the indication of finality of the prior restriction requirement, as well as the Examiner's indication that, upon allowance, the restricted claims will be rejoined.

Publication No. 2004/0127046

During the interview, the Examiner directed applicants' attention to U.S. patent publication No. 2004/0127046 as possibly being relevant to the question of patentability of the claimed invention. In response, applicants have reviewed the noted publication and offer the following comments in connection therewith.

The claimed invention is clearly distinguishable from the noted publication. The reference is directed to a polishing composition for a semiconductor wafer (see claim 1; page 1, lines 7-9 of the reference). The polishing composition of the reference is such that silica particles having smaller particle sizes are present in minimal amounts (see page 8, line 29 to page 9, line 13 of the reference). In fact, in the Examples of the reference, only silica particles having larger particle sizes of 31 to 550 μm are disclosed (see Table 3 of the reference). By contrast, the present invention is directed to a polishing composition for a memory hard disk, which contains silica particles having particle sizes of 40 nm or less in an amount of 60% or more. The reference thus fails to teach or suggest the claimed invention.

As this publication is not yet made of record, applicants submit herewith a Form PTO-1449 which identifies this publication, and request that the Examiner provide an initialed copy of same in due course.

Rejection under 35 USC 112 (paragraph two)

Claim 21 stands rejected under 35 USC 112 (paragraph two) as not distinctly claiming the invention. This rejection is respectfully traversed.

The Examiner objects to the claims for the reason that formulas (1) and (5) are recited in claims 1 and 21 (with formulas (2)-(4) being absent). Applicants submit that this is not a proper basis for a rejection under 35 USC 112 (paragraph two). One of ordinary skill in the art, upon reading claims 1

and 21, would have no difficulty in understanding the intent of the claims. There is no requirement that formulas in claims be numbered consecutively, as long as they are number consistently. As this is the case, this aspect of the rejection should be withdrawn.

The Examiner also rejects the claims for the reason that formula (5) of claim 21 does not appear to further limit formula (1) of claim 1. However, as confirmed by one of the attached Declarations under 37 CFR 1.132, formula (5) defines a relationship that is encompassed by formula (1).

As described at page 6, line 12 to page 7, line 9 of the specification, formula (1) defines the relationship of the cumulative volume frequency (V) and the particle size to be satisfied by the particle size distribution of the present invention. In each of the formulas (2)-(5), a favorable relationship is defined by gradation. As shown in Figures 1 and 2 (see the attached Declaration under 37 CFR 1.132), formula (5) defines the most favorable aspect of the scope defined by formula (1).

Claim 21 thus, contrary to the position of the Examiner, in fact further limits the invention of claim 1. The rejection is thus without basis and should be withdrawn.

Claim Rejections – 35 USC 103(a)

The Examiner has set forth various individual rejections of claims 1-8 and 21 under the provisions of 35 USC 103(a) over each of the following individual references: **Koichi et al '175** (US 6,551,175), **Oshima '789** (US 2002/0194789), **Ota et al '711** (US 2003/0110711), and **Oshima et al '146** (US 2004/0127146).

Reconsideration and withdrawal of each of these separate rejections is respectfully requested based on the following discussion.

Legal Standard for Determining Obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Applicants submit that the Examiner has failed to present a *prima facie* case of obviousness.

Distinctions Over the Cited Art

Oshima '789

The cited Oshima '789 reference has a publication date of December 26, 2002, and is assigned to Kao Corporation, which is also the assignee of the present invention. Notably, the inventions recited in the instant claims and the cited Oshima '789 reference had the same assignee (Kao Corporation) *at the time the respective inventions were made*. The Oshima '789 reference is accordingly not citable against the instant claims as of its US filing date (April 24, 2002), due to the safe harbor provisions of 35 USC § 103(c). It is only citable as of its December 26, 2002 publication date.

The December 26, 2002 publication date of the Oshima '789 reference, is the same date as applicant's priority date under 35 USC §119 to JP 2002-377288.

Accordingly, based on the submission of the enclosed verified English translation of JP 2002-377288 (which provide full 35 USC 112, first paragraph support for the invention now being claimed),

it is submitted that the cited Oshima '789 reference has been effectively antedated for all that it teaches and discloses.

The rejection is thus without basis and should be withdrawn.

Oshima '146

The cited Oshima '146 reference has a publication date of July 1, 2004, and is assigned to Kao Corporation, which is also the assignee of the present invention. Notably, the inventions recited in the instant claims and the cited Oshima '146 reference *had the same assignee (Kao Corporation) at the time the respective inventions were made,*. The Oshima '146 reference is accordingly not citable against the instant claims as of its US filing date (December 4, 2003), due to the safe harbor provisions of 35 USC § 103(c). Instead, it is only citable as of its July 1, 2004 publication date.

The July 1, 2004 publication date of the Oshima '146 reference, is clearly after the December 5, 2003 filing date of the instant application in the USPTO, so that the rejection over the cited Oshima '146 reference must be withdrawn.

Koichi et al '175

In the instant invention, a cumulative volume frequency (V) of the abrasive is 60 or more when a particle size (R) is 40 nm (see Formula (1)).

In contrast, in the cited Koichi et al '175 reference, it is described that an especially favorable D10 value is 40-60 nm (Embodiment 1 at column 4, lines 18-25) and that a favorable percentage of particles having a particle size of 40 nm or less is 3% or less (Embodiment 2 at column 5, lines 27-33). Supporting these descriptions, in Examples I-1 to I-5 of the cited reference, an abrasive having particle size distribution of which D10 is 45 nm or more is used.

It can be reasonably presumed that the polishing compositions in the examples of the cited Koichi et al '175 reference would not satisfy Formulas (1) and (5) of the present invention. In the cited

reference, the particle size distribution is defined on a number basis so that it cannot be directly compared with the particle size distribution in the present invention defined on a weight or volume basis. Applicants submit a Declaration under 37 CFR 1.132 (discussed below) in support of this assertion.

As noted above, in the cited Koichi et al '175 reference, it is favorable that the ratio of particles having a particle size of 40 nm or less is low. This feature of the cited reference is opposite to the feature of the present invention requiring a specific amount or more of polishing particles having a particle size of 40 nm or less. Accordingly, the present invention is neither taught nor suggested by the cited Koichi et al '175 reference.

Ota et al '711

As described in the attached Declaration under 37 CFR 1.132 (discussed below), particle size distribution on a volume basis cannot be determined by (or correlated to) particle size distribution based on number-base in a particle group where the particle size for a portion of the particles is not known. The reference discloses a combination of monomodal abrasives such that there is an unknown portion in the particle distribution. Accordingly, the particle size distribution of the claimed invention cannot be directly compared with that of Ota et al where the particle size for a portion of the particles is unknown.

Further, the polishing compositions satisfying the particle size distribution defined in the Ota et al '711 reference are disclosed in the specification of the instant application as Comparative Examples 1 to 5. These comparative examples in the instant application correspond to the examples of the cited Ota et al '711 reference as indicated in the below table.

Examples of Ota et al. (US 2003/0110711)	α or β	γ	Δ	$\epsilon, \eta, \text{ or } \theta$	Ξ
Comp. Example of the present invention	1	2	3	4	5

As shown in Table 2 of the present application (see page 23), Example 1 to 10 satisfying the definition of particle size distribution in the present invention show remarkable effects in reducing surface roughness in comparison with Comparative Examples 1 to 5. That is, the present invention exhibits excellent effects which cannot be expected by the cited Ota et al '711 reference.

In addition, since the cited reference discloses combinations of monomodal abrasives, there is an open portion in the particle size distribution of the cited reference. Further, in the cited Ota et al '711 reference, the particle size distribution is defined on a number basis so that it cannot be directly compared with the particle size distribution in the present invention, which is defined on a weight or volume basis.

It is not obvious to find a specific particle size distribution necessary for exhibiting unexpected effects based on such an uncomparable particle size distribution as noted above. Accordingly, the particle size distribution of the present invention is not rendered obvious by the cited Ota et al '711 reference.

In support of applicants' position as to the failure of Ota et al to teach or suggest the claimed invention, applicants direct the Examiner's attention to the attached Declaration under 37 CFR 1.132 having Figures 1 and 2 therein. As discussed and demonstrated by the Declaration, the Ota et al reference does not disclose a particle distribution which meets the limitations of applicants' claims.

Based on the above considerations, it is submitted that no motivation or teaching is found in the cited art of Koichi et al '175 or Ota et al '711 that would allow one of ordinary skill in the art arrive at the instant invention as asserted by the Examiner. Absent such motivation in the cited art the outstanding rejections cannot be sustained.

Declarations under 37 CFR 1.132

In support of applicants' position that the cited prior art fails to disclose or suggest the claimed invention, applicants submit herewith a Declaration under 37 CFR 1.132 which confirms those distinctions that exist between the cited prior art and the claimed invention from the standpoint of defining particle distribution in terms of volume-based or number-based. The Declaration confirms at page 3 that "It can be seen from the above that the relationship between the cumulative particle size distribution on number-base and the cumulative particle size distribution on volume-base changes dramatically due to a difference in particle sizes of a part of the entire particles." The Declaration also states at page 4 that "In other words, when particle sizes of the entire particles are partially unknown, the particle size distribution on volume-base cannot be determined according to a partial disclosure of the particle size distribution on number-base."

In other words, it is not possible to extrapolate from the limited teachings of the prior art to arrive at the claimed invention having specific ratios of volume distribution.

The showing of the Declaration under 37 CFR 1.132 thus rebuts any view of the Examiner that applicants' claimed volume distribution limitation is inherently disclosed or suggested by the number-based or particle-size based particle distributions of the cited prior art.

Applicants submit an additional Declaration under 37 CFR 1.132 which, as discussed above, both clarifies the relationship between formulas (1) and (5) of claims 1 and 21, and demonstrates the inapplicability of the Ota et al reference as discussed above.

The application is accordingly believed to be directed to patentable subject matter, and an early indication of same earnestly is solicited.

In view of the above, the application is believed to be in condition for allowance. An early indication of same earnestly is solicited.

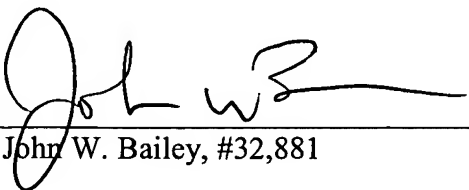
Should the Examiner have any questions concerning the present reply, he is respectfully requested to contact the undersigned at the telephone number provided.

A check in the amount of \$120.00 is attached as payment for the requested one month extension of time.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
John W. Bailey, #32,881


JWB/JWH/sh

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Enclosures:

Two Declarations under 37 CFR 1.132
PTO Form-1449